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EXAMINER
MEROUAN, ABDERRAHIM

ART UNIT	PAPER NUMBER
2628	

NOTIFICATION DATE	DELIVERY MODE
11/13/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

	Application No.	Applicant(s)
	10/581,222	BARENBRUG ET AL.
Office Action Summary	Examiner	Art Unit	
	ABDERRAHIM MEROUAN	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 June 2006</u>.
2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-14</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-14</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>01 June 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All b)☐ Some * c)☐ None of:
       1.☒ Certified copies of the priority documents have been received.
       2.☐ Certified copies of the priority documents have been received in Application No. _____.
       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
          application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)
1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   Paper No(s)/Mail Date. _____.
3)☐ Information Disclosure Statement(s) (PTO/SB/08)   5)☐ Notice of Informal Patent Application
   Paper No(s)/Mail Date _____.   6)☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 08-06)   **Office Action Summary**   Part of Paper No./Mail Date 20081028

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 10/14/2008 has been entered.

Specification

1.   The specification is objected to as failing to provide proper antecedent basis for the

claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the

following is required: Claim 14 discloses: "... computer readable medium ...", computer readable

medium doesn't have any antecedent in the specification.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1- 4 and 9 - 12 are rejected under 35 U.S.C.103(a) as being unpatentable over

Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich , In view of Wood (U.S.

Patent 6567095 B2) hereinafter referred as Wood.

4.   As per claim 1 Dietrich discloses: Computer graphics processor (Dietrich, Page 3,

Paragraph [0044], lines 3-6) having a renderer for rendering in parallel N views of 3D images,

(Dietrich, Page 6. Paragraph [0072], lines 2-5) said renderer comprising:

a rasterizer configured to transverse for transversing a surface grid over a surface of a primitive

of a 3D image primitives (Dietrich, Page 3, Paragraph[0047], lines 3-5, Paragraph [0048], lines

1-2, and Page 4, line 1) for all N different views of said 3D image such that transversing is

performed once for said 3D image (Dietrich, Page 4. Paragraph [0048], lines 1-3),

a shader unit configured to determine for determining a color of the output (Dietrich, Page 4.

Paragraph [0008], lines 1-8), of the rasterizer and forward (Dietrich, Figure 1A-1, Block 152,

and 153), a shaded color sample along with its screen coordinates (Dietrich, Page 4. Paragraph

[0049], lines 1-3), and

N screen space resamplers (Dietrich, Page 4, Paragraph [0049], lines 9-10), each of said screen

space resamplers being configured to resample the shaded color sample determined by said

shader unit (Dietrich, Page 4. Paragraph [0050], lines 1-6).

Dietrich doesn't disclose:

N different views such that resampling is performed N times in parallel for said 3D image.

However,Wood discloses different views such that resampling is performed N times in parallel

for said 3D image. (Wood, Column 3, lines 16-25, and Colum 4, lines 23-32).

It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to

incorporate the teachings of Wood into the process taught by Dietrich, because through such

incorporation would provide a stereoscopic image view.

5.   As per claim 9, arguments used to reject claim 1 are the same arguments used to reject

claim 1.

6.   As per claim 2, Dietrich in view of Wood discloses: Computer graphics processor

according to claim 1.

Dietrich doesn't disclose: a texture memory for storing texture maps, wherein said surface grid

is derived from a texture map being associated with said primitive and being stored in said

texture memory. However, Wood discloses: a texture memory (Wood, Column 6, line 13) for

storing texture maps,(Wood, Column 6, lines 14 and 15) wherein said surface grid is derived

from a texture map(Wood, Column 6, lines 15- 18) being associated with said primitive (Wood,

Column 6, lines 24 -26) and being stored in said texture memory (Wood, Column 6, line 13)

It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to

incorporate the teachings of Wood into the process taught by Dietrich, because through such

incorporation would provide an improved high speed access to the Texel.

7.   As per claim 3, Dietrich in view of Wood discloses: Computer graphics processor

according to claim 2

Dietrich in view of Wood doesn't disclose: wherein a grid associated to one of the texture maps

stored in the texture memory is chosen as surface grid, if said texture map is addressed

independently.

said texture map is based on a 2D texture, and the texture coordinates at the vertices do not make

up a degenerate primitive.

However Wood discloses: wherein a grid associated to one of the texture maps (Wood; Column

6, lines 3- 4) stored in the texture memory is chosen as surface grid, (Wood; Column 6, lines 7

-10) if three requirements are fulfilled, said three requirements including:

said texture map is addressed independently. (Wood; Column 6, lines 33- 35)

said texture map is based on a 2D texture, (Wood; Column 6, lines 25- 26)

and the texture coordinates at the vertices do not make up a degenerate primitive. (Wood;

Column 1, lines 38- 41)

It would have been obvious to one skilled in the art, at the time of the Applicant's

invention, to incorporate the teachings of Wood into the process taught by Dietrich, because

through such incorporation would provide an improved high speed access to the Texel.

8.   As per claim 4, Dietrich in view of Wood discloses: Computer graphics processor

according to claim 3.

Dietrich in view of Wood doesn't disclose:

the texture map with the largest area in texture space is chosen

if more than one texture maps stored in said texture memory fulfill said three requirements a)-c).

However, Wood discloses:

the texture map with the largest area in texture space is chosen (Wood; Column 6, lines 13 -15)

if more than one texture maps stored in said texture memory (Wood; Column 6, lines 22-24)

fulfill said three requirements a)-c). (Wood; Column 6, lines 33 to 35 and, lines 25 -26, Column

1, lines 38 -41)

It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to

incorporate the teachings of Wood into the process taught by Dietrich, because through such

incorporation would provide a more flexible and efficient texture storage when generating a new

image

9.   As per claim 10, arguments used to reject claim 2 are the same arguments used to reject

claim 10.

10.   As per claim 11, arguments used to reject claim 3 are the same arguments used to reject

claim 11.

11.   As per claim 12, arguments used to reject claim 4 are the same arguments used to reject

claim 12.

14.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al.

(U.S. PGPUB 20030179220A1), hereinafter Dietrich , in view of Wood (U.S. Patent 6567095

B2) hereinafter referred as Wood, and further in view of Hayhurst (U.S. PGPUB 20010012018

A1) hereinafter referred as Hayhurst.

15.   As per claim 5, Dietrich in view of Wood discloses: Computer graphics processor

according to claim 1 or 2

Dietrich in view of Wood doesn't disclose: A mean for addressing a display screen,

said renderer having an input for a 3D model and an input for at least one viewpoint for

rendering image information for supplying to the addressing means wherein the renderer further

comprises an initial part having an input for the 3-D model and for at least one main view point

for rendering objects in the form of at least one main view point Z-stack having stack layers with

color information and Z-values the renderer further comprising a Z-stack constructor in which,

from the at least one main view point Z-stack - generated by the initial stage, Z-stacks for

additional viewpoints are constructed, and a further image information occlusion semantics stage

for generating image information from the z-stacks . However, Hayhurst discloses:

A mean for addressing a display screen, (Hayhurst, Figure 1, Block 105)

said renderer having(Hayhurst Page 3 ,Paragraph [0026] , lines 15 to 16) an input for a 3D

model (Hayhurst Figure 1, Block 106 and paragraph [0025] , line 12) and an input for at least

one viewpoint for rendering image information for supplying to the addressing means(Hayhurst ,

Page 3, paragraph [0026] , lines 1- 2, and lines 15- 24)

wherein the renderer (Hayhurst , Page 3 ,Paragraph [0026] , lines 15 - 16) further comprises an

initial part having an input for the 3-D model and for at least one main view point for rendering

objects(Hayhurst Figure 1, Block 106 and paragraph [0025] , line 12) in the form of at least one

main view point Z-stack having stack layers with color information and Z-values (Hayhurst,

Page 1, Paragraph [0009], lines 5 -7 and Page 2 ,Paragraph [0010] , lines 8- 14)

the renderer further comprising(Hayhurst , Page 3 ,Paragraph [0026] , lines 15 -16)

a Z-stack constructor in which, from the at least one main view point Z-stack (Hayhurst Page 2

,Paragraph [0011] , lines 2- 12) generated by the initial stage, Z-stacks for additional viewpoints

are constructed, and a further image information occlusion semantics stage for generating image

information from the z-stacks (Hayhurst Page 2 ,Paragraph [0012] , lines 2 -11)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the

invention to use the Z-stack constructor as taught by Hayhurst into the process of the Dietrich in

view of Wood to add Z-stack constructor for generating image information from Z-stacks.

18.   Claim 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich,

JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich in view of Wood (U.S. Patent

6567095 B2) hereinafter referred as Wood, in view of Hayhurst (U.S. PGPUB 20010012018 A1)

hereinafter referred as Hayhurst, and further in view of Hanna et al. (U.S. Patent 006269175 B1)

hereinafter referred as Hanna1.

19.   As per claim 6. Dietrich in view of Wood and in view of Hayhurst discloses: Computer

graphics processor according to claim 5.

 Dietrich in view of Wood and in view of Hayhurst doesn't disclose: an object extracter for

extraction of objects from a view point z- stack. However, Hanna discloses: an object extracter

for extraction of objects from a view point z- stack. (Hanna1, Column 11, lines 25- 27)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention that adding an object extracter to the computer graphics processor as taught by Hanna1 into the process of the Dietrich In view of Wood and in view of Hayhurst and in view to provide an efficient view of 3D scenes on 3D display system.

20.   As per claim 7. Dietrich In view of Wood and in view of Hayhurst: Computer graphics processor according to claim 6

Dietrich in view of Wood and in view of Hayhurst doesn't disclose: wherein the object extracter is arranged for extracting objects from the at least one main view point z-stack. However, Hanna1 discloses: wherein the object extracter is arranged for extracting objects from the at least one main view point z-stack. (Hanna1, Column 11, lines 25 - 27)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention the use of the object extractor as taught by Hanna1 into the process of the Dietrich In view of Wood and in view of Hayhurst and in v to describe the functionality of the object extractor from at least one main view point z-stack.

21.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich in view of Wood (U.S. Patent 6567095 B2) hereinafter referred as Wood, and in view of Hayhurst (U.S. PGPUB 20010012018 A1) hereinafter referred as Hayhurst, and further in view of Hanna et al. (U.S. PGPUB 20010036307 A1) hereinafter referred as Hanna2.

22.   As per claim 8. Dietrich in view of Wood and in view of Hayhurst teaches: Computer

graphics processor according to claim 5 .

Dietrich In view of Hayhurst doesn't disclose: wherein the DOF rendering stage is arranged for

DOF processing of the at least one main view point z-stack into a at least one main view point z-

stack comprising DOF blurring. However, Hanna discloses: wherein the DOF rendering stage is

arranged for DOF processing.(Hanna2, Page 1, Paragraph [0013], lines 3- 5) of the at least one

main view point z-stack into a at least one main view point z-stack .(Hanna2, Page 1, Paragraph

[0038], lines 3- 5)comprising DOF blurring.(Hanna2, Page 1, Paragraph [0013], lines 5 -6)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the

invention the use of the DOF rendering stage as taught by Hanna2 into the process of the

Dietrich in view of Wood and in view of Hayhurst for a high image resolution.

23.   Claim 13 is rejected under 35 U.S.C.103(a) as being unpatentable over Dietrich, JR et

al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich, in view of Wood (U.S. Patent 6567095

B2) hereinafter referred as Wood, and further in view of Hayhurst (U.S. PGPUB 20010012018

A1) hereinafter referred as Hayhurst.

24.   As per claim 13: Dietrich, in view of Wood discloses: Method of rendering N views of

3D images according to claim 11:

Dietrich, in view of Wood doesn't discloses: further comprising the steps of: Supplying data and

addressing means of a 3D display wherein for a main view point objects in the form of at least

one main view point Z-stack comprising stack layers are rendered with RGB and Z-values

constructing from the at least one main view point Z-stack , z-stacks for additional viewpoints

and generating from the Z-stacks for additional viewpoints by means of Z-tracing data to be

supplied to the addressing means. However, Hayhurst discloses: Supplying data and addressing

means of a 3D display device (Hayhurst Figure 1; Page 3, paragraph [0026] , line 1, lines 23-25)

wherein for a main view point objects in the form of at least one main view point Z-stack

comprising stack layers are rendered with RGB and Z-values (Hayhurst Page 2 ,Paragraph

[0010] , lines 8-14) constructing from the at least one main view point Z-stack , z-stacks for

additional viewpoints, (Hayhurst Page 2 ,Paragraph [0011] , lines 2 -7) and generating from the

Z-stacks for additional viewpoints by means of Z-tracing data to be supplied to the addressing

means , (Hayhurst Page 2 ,Paragraph [0012] , lines 2 -11)

It would have been obvious to one skilled in the art, at the time of the Applicant's

invention, to incorporate the teachings of Hayhurst into the process taught by Dietrich, in view of

Wood, because through such incorporation would provide an improved high speed access for

accessing data

25.   Claim 14 is rejected under 35 U.S.C.103 (a) as being unpatentable over Dietrich, JR et al.

(U.S. PGPUB 20030179220A1), hereinafter Dietrich, in view of Wood (U.S. Patent 6567095

B2) hereinafter referred as Wood, and further in view of Burrell. (U.S. PGPUB 20030145008

A1) hereinafter referred as Burrell.

26.   As per claim 14, Dietrich in view of Wood doesn't disclose: Computer graphics

processor according to claim 9.

 Dietrich in view of Wood doesn't disclose: Computer program product comprising program

code means stored on a computer readable medium for performing a method according to claim

9, when said program is run on a computer. However, Burell discloses: Computer program

product comprising program code means stored on a computer readable medium for performing

a method according to claim 9, when said program is run on a computer. (Burrell Page 4,

Paragraph [0034], lines 7 - 9)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the

invention, to run a program code stored in a computer as taught by Burrell into the process of the

Dietrich in view of Wood, to perform the method of displaying 3D scenes on 3D display system.

Response to Arguments

27.   Applicant's arguments filed 10/14/2008 have been fully considered but they are not

persuasive.

28.   The applicant arguments to amended claims, that the prior art doesn't disclose: " a

rasterizer configured to transverse a surface grid over a surface of a primitive of a 3D image for

all N different views of said 3D image such that transversing is performed once for said 3D

image" as recited in the amended independent claim 1. This argument is not persuasive because

Dietrich in view of Wood stated that:"…   The transformed vertices form the input for a rasterizer

152. The rasterizer 152 computes a fragment for each pixel covered by each of the primitives. A coverage mask stored with the fragment indicates which portions of the pixel the fragment covers." (see, Dietrich, Paragraph[0048]), also (see, Wood, Column 3, lines 16-25, and Colum 4, lines 23-32).

29.   The applicant arguments to amended claims, that the prior art doesn't disclose: " N screen space resamplers, each of said screen space resamplers being configured to resample the shaded color sample determined by said shader unit". This argument is not persuasive because Dietrich in view of Wood stated that:" … An optional sample expansion stage 154 generates multiple samples for each fragment." (see, Dietrich, Paragraph[0049], lines 9-10), and (Dietrich, Page 4. Paragraph [0050], lines 1-6)

Conclusion

28.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABDERRAHIM MEROUAN whose telephone number is (571)270-5254. The examiner can normally be reached on Monday to Friday 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao Wu can be reached on (571) 272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be

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information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Abderrahim Merouan/

Examiner, Art Unit 2628

/XIAO M. WU/

Supervisory Patent Examiner, Art Unit 2628